

DIRECT TESTIMONY OF  
ROBERT A. SCHAFFELD  
ON BEHALF OF SOUTHERN POWER COMPANY-SOUTH CAROLINA

SCPSC DOCKET NO. 2009-\_\_\_\_-E

1   **Q.   PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

2   A.   My name is Robert A. Schaffeld. I am the Director of Compliance and  
3       Corporate Affairs for Southern Power Company d/b/a Southern Power  
4       Company-South Carolina (“Southern Power” or “Company”) and am  
5       responsible for the development of the major electric generating facility  
6       (“Facility”) the Company is proposing to build near the North Carolina/South  
7       Carolina border in Cleveland County, North Carolina. The subject of the  
8       Company’s Application in this proceeding is the 0.9 mile long segment of a  
9       230-kV transmission line (interconnecting Southern Power’s generating  
10      facility to Duke Energy’s transmission network) the Company proposes to  
11      build in South Carolina, connecting the Facility to a nearby substation. My  
12      business address is 600 North 18th Street, BIN 15N-8198, Birmingham  
13      Alabama 35291.

14

15   **Q.   PLEASE   SUMMARIZE   YOUR   EDUCATIONAL   AND**  
16   **PROFESSIONAL EXPERIENCE.**

17   A.   I received a Bachelor of Science in Civil Engineering from Auburn  
18       University in 1991; a Master of Science in Environmental Engineering from  
19       the University of Alabama in 1992; a Master of Science in Environmental

1 Management from Samford University in 1995; and a Master of Business  
2 Administration from Samford University in 2001.

3 My professional experience includes several roles within Southern Power  
4 beginning in 1991 when I began as an environmental engineer in the  
5 Research and Environmental Affairs Department. Since that time, I have  
6 been in environmental, generation planning and development, health and  
7 safety, and natural gas services roles.

8 My recent responsibilities have included the role of Director of Fleet  
9 Operations, where I was responsible for the Company's production  
10 organization consisting of the operations and generation support functions of  
11 eight electric generating stations, located in four states.

12 Currently, as Director of Compliance and Corporate Affairs, I am the  
13 executive responsible for external affairs, generation siting, transmission  
14 services, environmental services and safety departments for Southern Power  
15 Company. I serve on the Company's Management Council as Compliance  
16 Officer.

17  
18 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS**  
19 **COMMISSION?**

20 **A. No.**

1   **Q.    WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

2    A.    The purpose of my testimony is to adopt and support the Application of  
3           Southern Power Company-South Carolina for a Certificate of Environmental  
4           Compatibility and Public Convenience and Necessity to construct and operate  
5           the South Carolina portion of a 230-kV electric transmission line connecting  
6           the Ripp substation in Cherokee County, South Carolina to the Company's  
7           proposed electric generating facility in Cleveland County, North Carolina.

8  
9   **Q.    PLEASE DESCRIBE SOUTHERN POWER COMPANY.**

10   A.    Southern Power is organized under the laws of the State of Delaware, and its  
11          principal office is in Atlanta, Georgia. Southern Power owns, builds,  
12          acquires and operates generating stations and markets electricity in the  
13          competitive wholesale power supply business in the southeastern part of the  
14          United States. The Company currently has 7,700 MW of generating capacity  
15          from its plants in Alabama, Georgia, Florida and North Carolina. Southern  
16          Power's electricity output is marketed to wholesale customers in the region.  
17          Its earnings for 2008 were approximately \$144,000,000. The Company is a  
18          wholly-owned, first-tier subsidiary of The Southern Company, and is  
19          authorized to transact business in South Carolina as Southern Power  
20          Company – South Carolina.

1    **Q.    PLEASE DESCRIBE THE SOUTHERN COMPANY.**

2    A.    The Southern Company is one of the largest integrated, investor-owned  
3           utility companies in the United States. It serves approximately 4.3 million  
4           residential, commercial and industrial customers and has more than 42,000  
5           MW of electric generating capacity. As of year-end 2008, The Southern  
6           Company's operating revenues were \$17.127 billion, net income was \$1.742  
7           billion, and total assets were \$48.347 billion.

8  
9    **Q.    PLEASE IDENTIFY THE AREA IN WHICH SOUTHERN POWER**  
10       **PROPOSES TO LOCATE ITS NEW GENERATING FACILITY.**

11   A.    The Facility will be constructed in North Carolina on a 283-acre parcel  
12           between Interstate 85, the North Carolina/South Carolina border, and  
13           Highway 216 in Cleveland County, North Carolina. The site is bounded by  
14           Interstate 85 to the north, Battleground Road to the east, the North  
15           Carolina/South Carolina state line to the south, and Vulcan Material's  
16           Blacksburg quarry to the west.

17  
18   **Q.    PLEASE DESCRIBE THE FACILITY.**

19   A.    The Facility will initially consist of four combustion turbine generating units  
20           with a total generating capacity of 720 MW. The units are expected to go  
21           into commercial operation in 2012. Two additional combustion turbine units  
22           (180 MW from each CT) may be installed in the future once contracts for that

1 generating capacity have been secured. The primary fuel source for the  
2 combustion turbines will be natural gas, which is a very clean method of  
3 generating electricity with low emissions and no solid waste. No. 2 Distillate  
4 Fuel Oil will be a back-up source of fuel for the combustion turbine units.  
5 The units will be constructed to meet the latest federal and state emission  
6 requirements. Additional equipment to support the Facility includes exhaust  
7 stacks, combustion turbine enclosures, generators, turbine air inlet ducts and  
8 silencers, CEMS (continuous emissions monitoring systems), generator step-  
9 up transformers, station service transformers, switch gears, a gas  
10 metering/conditioning station, water treatment trailers, a demineralized water  
11 tank, fuel oil storage tanks, a fuel oil unloading station, and a fire protection  
12 system.

13 Construction may occur in two phases. In the first phase, four of the six  
14 combustion turbine units will be constructed, and in the second phase, the  
15 final two units may be constructed. The two-phase approach will improve  
16 staffing efficiency and has cash-flow benefits. The first phase of construction  
17 is anticipated to begin in January 2010 with commercial operation scheduled  
18 to begin January 1, 2012. The second phase of construction is anticipated to  
19 begin in late 2011 with commercial operation expected to begin in the fourth  
20 quarter of 2013. Neither the size of the transmission line nor the right-of-way  
21 width will be affected by addition of the final two units. The expected  
22 service life of the Facility is projected to be 35 years.

1   **Q.   HOW WILL THE FACILITY BE CONNECTED TO THE**  
2   **TRANSMISSION FACILITIES IN THE AREA?**

3   A.   The Facility will be interconnected to the Ripp substation owned by Duke  
4   Energy Carolinas in northeastern Cherokee County, South Carolina, via a  
5   230-kV transmission line approximately 1.8 miles long.

6  
7   **Q.   PLEASE EXPLAIN THE NEED FOR THE FACILITY.**

8   A.   Southern Power has used a number of public sources to assess the supply and  
9   demand of electricity in North Carolina and the SERC Reliability  
10   Corporation ("SERC") area. The compound annual growth rate over the next  
11   ten years is 1.94% in the SERC area, according to the North American  
12   Electric Reliability Corporation ("NERC") 2008 Long-Term Reliability  
13   Assessment 2008-2017. Duke Energy Carolinas, LLC projects an average  
14   annual territorial energy need of 1.5%, without accounting for the impacts of  
15   new energy efficient measures, over the next 20 years. If the impacts of new  
16   energy efficiency measures are included, the projection remains at 1.4%  
17   according to Duke Energy Carolinas' 2008 Integrated Resource Plan in PSC  
18   Docket No. 2005-356-E and in NCUC Docket Number E-100, Sub 118.  
19   Similarly, Progress Energy Carolinas projects a retail demand growth of  
20   1.7% without accounting for demand-side management and 1.0% after  
21   adjusting for demand-side management. This is found in Progress Energy

1 Carolinas' 2008 Integrated Resource Plan filed in PSC Docket No. 2006-174-  
2 E and NCUC Docket Number E-100, Sub 118, as of September 2008.

3 Both Duke and Progress show a need for additional generation to come  
4 online in the 2011–2012 timeframe according to the Duke and Progress 2008  
5 Integrated Resource Plans. Progress Energy expects a 13% summer reserve  
6 margin in 2010 in its service area and a 17% summer reserve margin in 2011  
7 with 600 MW of additional combined cycle capacity at its Richmond County,  
8 North Carolina facility according to Progress' 2008 Integrated Resource Plan.  
9 Similarly, by 2011, Duke Energy Carolinas forecasts that it will need an  
10 additional 2,300 MW of generation to maintain a targeted 17% reserve  
11 margin, according to Duke's 2008 Integrated Resource Plan.

12 Based on its assessments, Southern Power has concluded that there is a need  
13 for additional peaking capacity in North Carolina. Additional wholesale  
14 generation is essential to meet the current and future needs for electricity in  
15 North Carolina and in Duke's and Progress' service area. The 230-kV  
16 transmission line, which is the subject of this Application, is needed to tie the  
17 four combustion turbine generators Southern Power proposes to construct to  
18 the transmission system in order to deliver electricity from these facilities.

19 The southern terminus of the South Carolina segment of the transmission line  
20 in this Application will interconnect with Duke Energy's Ripp substation  
21 where the power generated at Southern Power's proposed generating facility  
22 will flow onto Duke Energy's transmission system. Southern has entered

1 into an Interconnection Agreement with Duke Energy, and that  
2 Interconnection Agreement is a part of Southern Power's Application in this  
3 proceeding. From the Ripp substation, Southern Power's transmission line  
4 will run due north paralleling an existing Duke Energy 230-kV line, then  
5 east-northeast until it reaches the boundary between North Carolina and  
6 South Carolina (a total distance of approximately 9/10 of a mile in South  
7 Carolina). From that point, the North Carolina portion of the Company's  
8 transmission line will run due east, then north (a total distance of  
9 approximately 9/10 of a mile in North Carolina) to its northern terminus at  
10 the switchyard of the Company's proposed generating facility.

11 Southern Power has entered into long-term power purchase agreements  
12 (PPAs) with North Carolina Municipal Power Agency Number 1 (NCMPA1)  
13 and North Carolina Electric Membership Corporation (NCEMC) for  
14 approximately 75% (540 MW) of the output of the proposed generating  
15 facility as initially constructed. The Company has provided summaries of the  
16 power purchase agreements with NCMPA1 and NCEMC as a part of its  
17 Application. Rural Utilities Service approved the NCEMC PPAs on  
18 March 12, 2009.

19  
20 **Q. DESCRIBE THE PROBABLE ENVIRONMENTAL IMPACT OF THE**  
21 **230-kV TRANSMISSION LINE.**



1     A.     The proposed transmission line will not have any significant environmental  
2            impact along its 0.9 mile route in northeastern Cherokee County. I base this  
3            conclusion on the following facts. First, much of the line in South Carolina  
4            will parallel an existing Duke Energy Carolinas 230-kV transmission line on  
5            steel lattice towers on a 150-foot-wide right-of-way. Next, a significant  
6            portion of the 230-kV line will be constructed near Vulcan Materials'  
7            Blacksburg quarry where rock mining operations have been conducted for  
8            years. Third, the line and 125-foot right-of-way are in a remote,  
9            unincorporated, rural area which crosses only three landowners, and rights-  
10          of-way from these owners are being obtained and copies will be provided to  
11          the Commission. Fourth, the bundled electrical conductors will be placed on  
12          H frame steel and concrete pole structures approximately 500 to 800 feet  
13          apart, depending on topography, with a conductor height of 90 to 140 feet  
14          above ground. Next, the right-of-way for the line is not located in proximity  
15          to any houses, churches, commercial buildings or structures, so its visual  
16          impact will be minimal. Additionally, no biological, botanical, cultural,  
17          archaeological, wetlands, threatened or endangered plant or animal species,  
18          wildlife or other significant natural or human resources will be affected by  
19          the imposition of the right-of-way or the construction and operation of the  
20          transmission line. Further, the right-of-way area will be maintained by tree  
21          clearing, mowing and vegetation control; however, agricultural and other  
22          compatible uses will be permitted within the right-of-way. There are no

1 projected impacts to wetlands along the transmission line route. Herbicide  
2 will be used sparingly to reduce the potential that it might contaminate any  
3 aquatic resources. Finally, the route selected has minimal overall social and  
4 environmental impact. My opinion about the absence of a significant  
5 environmental impact is supported by an environmental report completed by  
6 AECOM which is attached to our Application.

7 The only cultural resource that the line route passes near is the Old Shiloh  
8 Presbyterian Church Cemetery on the border between North and South  
9 Carolina. The cemetery is encircled by a 10-12 foot wide dirt road which  
10 forms a circumferential boundary. The closest point that the outer edge of  
11 the transmission line right-of-way comes to that road is 12 feet. The closest  
12 point of the centerline of the transmission line's right-of-way to the road is  
13 approximately 75 feet. At most times of the year, the H-frame structures  
14 supporting the line will not be plainly visible from the cemetery. Southern  
15 Power employed New South Associates to conduct a ground-penetrating  
16 radar study to determine if there were any graves outside of the cemetery area  
17 and beyond the road encircling it and found none. A copy of that study is  
18 attached to our Application. The Kings Mountain National Military Park,  
19 located approximately two miles east of the nearest location of the Cleveland  
20 County Generating Facility 230-kV Bus Line, will not be impacted by the  
21 project.

1    **Q.    IS THE IMPACT OF THE FACILITY UPON THE ENVIRONMENT**  
2           **JUSTIFIED    CONSIDERING    THE    STATE    OF    AVAILABLE**  
3           **TECHNOLOGY    AND    THE    NATURE    AND    ECONOMICS    OF**  
4           **VARIOUS ALTERNATIVES?**

5    A.    Yes.    The least impactful route has been selected for this relatively short  
6           transmission line.    Only three landowners are affected.    A high percentage of  
7           the line's route is through forested areas, with the balance being immediately  
8           adjacent to existing quarry operations.    The line connects at the northwestern  
9           point of the Ripp substation, which is the only compass direction not  
10          currently occupied by existing transmission lines emanating from the  
11          substation.    In my opinion, the impact of the facility on the environment will  
12          be minimal and the route selected will have virtually no social and  
13          environmental impact.

15   **Q.    WILL THE 230-kV LINE SERVE THE INTEREST OF SYSTEM**  
16          **ECONOMY AND RELIABILITY?**

17   A.    Yes, this 230-kV transmission line will serve the interest of system economy  
18          and reliability by improving and enhancing the major transmission line  
19          network for Duke Energy Carolinas.    Although no South Carolina customers  
20          will be served at this time, this transmission line will increase the reliability  
21          and economy of Duke Energy's service area, which includes the Piedmont  
22          region of South Carolina, by providing reliable peaking power.    Thus, South

1 Carolina consumers will benefit from the project. Southern Power's  
2 proposed generating facility and the 230-kV line covered by this Application  
3 will provide a source of wholesale power which may postpone the need to  
4 build additional peaking facilities to serve South Carolina customers in Duke  
5 Energy's service area.  
6

7 **Q. IS THERE REASONABLE ASSURANCE THAT THE PROPOSED**  
8 **FACILITY WILL CONFORM TO APPLICABLE STATE AND**  
9 **LOCAL LAWS AND REGULATIONS?**

10 A. Yes. I believe that the proposed facility, including the South Carolina  
11 interconnection line, will be in conformance with all applicable state and  
12 local laws and regulations. The other eight plants currently operated by  
13 Southern Power located in North Carolina, Georgia, Alabama, and Florida,  
14 including our combustion turbine facility in Rowan County, North Carolina,  
15 all operate within the applicable state and local laws and regulations, and our  
16 Company is committed to do the same at this facility.

1    **Q.    DO YOU RECOMMEND THAT THE SOUTH CAROLINA PUBLIC**  
2           **SERVICE COMMISSION GRANT A CERTIFICATE OF**  
3           **ENVIRONMENTAL COMPATIBILITY AND PUBLIC**  
4           **CONVENIENCE AND NECESSITY FOR THIS 230-kV**  
5           **TRANSMISSION LINE?**

6    A.    Yes. Southern Power Company-South Carolina believes that this 230-kV  
7           line will help provide highly reliable, necessary, new transmission capacity.  
8           Additionally, the line will support system economy and reliability, will not  
9           adversely affect the local environment and will serve the public convenience  
10          and necessity.

11  
**Q.    DOES THAT CONCLUDE YOUR TESTIMONY?**

A.    Yes

**BEFORE  
THE PUBLIC SERVICE COMMISSION  
OF  
SOUTH CAROLINA**

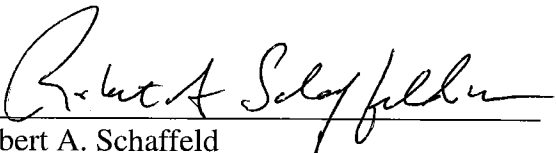
**Docket No. 2009-\_\_\_\_-E**

**In Re: Application of Southern  
Power Company d/b/a Southern Power  
Company-South Carolina for a  
Certificate of Environmental  
Compatibility and Public Convenience  
and Necessity for the Construction  
and Operation of a New 230-kV  
Transmission Line in Cherokee County,  
South Carolina**

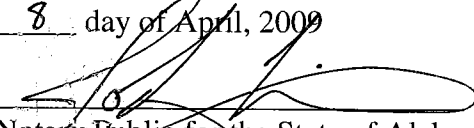
**VERIFICATION OF  
PRE-FILED TESTIMONY**

I, Robert A. Schaffeld, being duly sworn, do hereby attest and verify that:

1. I am the Director of Compliance and Corporate Affairs for the Applicant  
Southern Power Company-South Carolina;
2. I am authorized to testify on behalf of the Applicant;
3. I have read the foregoing Pre-Filed Testimony, and the facts contained  
therein are true and correct to the best of my knowledge, information and belief.

  
Robert A. Schaffeld  
Southern Power Company - South Carolina

SWORN to before me this  
8 day of April, 2009

  
Notary Public for the State of Alabama  
My Commission Expires: 1/19/2010

## PROOF OF SERVICE

This is to certify that I, Faye A. Flowers, have served the parties as indicated below with one (1) copy of the Direct Testimony of Robert A. Schaffeld addressed as follows:

**Via U.S. Mail**

C. Earl Hunter, Commissioner  
S.C. Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201

**Via U.S. Mail**

John Frampton, Executive Director  
S.C. Department of Natural Resources  
Post Office Box 167  
Columbia, SC 29202

**Via U.S. Mail**

Ben L. Clary  
Cherokee County Administrator  
210 N. Limestone Street  
Gaffney, SC 29340

**Via U.S. Mail**

Trudy Martin  
Blacksburg Town Administrator  
105 S. Shelby Street  
Blacksburg, SC 29702

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Rick Peterson  
Safety/Emergency Management Director  
1434 N. Limestone St.  
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**Via Hand Delivery**

C. Dukes Scott, Executive Director  
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**Via U.S. Mail**

Chad Prosser, Director  
S.C. Department of Parks, Recreation  
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**Via U.S. Mail**

The Honorable David Hogue  
Mayor of Blacksburg  
105 S. Shelby Street  
Blacksburg, SC 29702

**Via U.S. Mail**

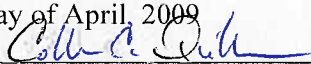
The Honorable L. Hoke Parris  
Chairman, Cherokee County Council  
100 Parris Trail  
Gaffney, SC 29340-6736



Faye A. Flowers  
Parker Poe Adams & Bernstein LLP  
1201 Main Street, Suite 1450 (29201)  
PO Box 1409  
Columbia, SC 29202

SWORN to before me this

15<sup>th</sup> day of April, 2009

  
Colleen C. Quillen, Notary Public for South Carolina  
My Commission Expires: May 6, 2012